

S/020/62/146/003/013/019
B101/B144

Conversions of free radicals ...

isoprene at room temperature, owing to quick radical recombination. At -196°C , cis-polyisoprene showed a spectrum similar to that of trans-compound. The concentration of free radicals at -196°C was higher than at room temperature. The kinetics of disappearance of free radicals is described by an equation of second degree and corresponds to the recombination $\text{R}^{\cdot} + \text{R}^{\cdot} \rightarrow \text{stable product}$. As the slope of the straight lines representing the "reciprocal concentration of free radicals versus time" depends on the dose, it is concluded that in the case of high doses the recombination is impeded by steric hindrances in the amorphous part of the polymer. The following effective constants of radical disappearance have been calculated:

Dose, $\text{r} \cdot 10^{-6}$	10	20	37	47
$K_{\text{eff}}, \text{sec}^{-1} \cdot 10^4$	6.25	4.33	3.34	2.74

Calculation of the degree of cross linking according to P. L. Flory (J. Chem. Phys., 11, 521 (1943)) showed that at 10 Mrad about 600 isoprene units were between two cross links, that the number of cross links increased with the dose, and that at 150 Mrad 1.2 isoprene units were between two cross links. The steady decrease of K with increasing

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number of cross links also proves that with increasing density of the network the mobility of molecular chains is impeded and the recombination of free radicals is rendered difficult. There are 4 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific Research Institute of the Rubber Industry). Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences USSR)

PRESENTED: May 21, 1962, V. N. Kondrat'yev, Academician.

SUBMITTED: May 25, 1962

Card 3/3

ACCESSION NR: AP3006755

S/O190/63/005/009/1339/1344

AUTHORS: Neyman, M. B.; Fedosyeva, T. S.; Chubarova, G. V.; Buchachenko, A. L.;
Lebedev, Ya. S.

TITLE: A study of the radicals in irradiated polyformaldehyde

SOURCE: Vy*sokomolekulyarny*ye soedineniya, v. 5, no. 9, 1963, 1339-1344

TOPIC TAGS: free radical, polyformaldehyde, electron paramagnetic resonance, chain
polymer, gamma irradiation, polymer chain/ EPR 2 IKhF spectrometer

ABSTRACT: Structural and kinetic characteristics of free radicals in irradiated
polyformaldehyde (PFA) were investigated. Powdered PFA was placed in soldered and
evacuated ampules and was subjected to gamma radiation from a Co⁶⁰ source. The
study of electron paramagnetic resonance (EPR) radical spectra at low temperatures
was conducted on PFA irradiated at 77K with doses of 5×10^6 and 1×10^7 roentgens.
Spectra were recorded on the spectrometer EPR-2 IKhF. A special ampule was used for
room temperature radiation experiments. The ampule was connected to vacuum equip-
ment to allow varying gas concentrations around the specimens. Means were provided
for controlling the ambient air temperature. Test results indicated: 1) two types

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ACCESSION NR: AP3006755

of radicals are present, the stable $\sim O - CH - O \sim$ radical and short-lived radicals from polymer chain rupture; 2) for the stable radical, defrosting of internal motions of the molecular chains occurs at temperatures below $-196K$. The recombination reaction is described by a second-order equation with the constant rate of recombination given by $k = 10^{-7} \exp(-19\,000/RT) \text{ cm}^3/\text{sec}$. The value of the annihilation rate constant of radicals is higher in oxygen than in a vacuum and depends linearly upon the pressure: $k = 10^{-9} k_p^{-1} [O_2] \exp(-17\,000/RT) \text{ cm}^3/\text{sec}$. Orig. art. has: 4 formulac, 8 equations, and 6 figures.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AN SSSR)

SUBMITTED: 19Feb62

ENCL: 00

SUB CODE: 00

NO REF SOV: 008

OTHER: 003

Card 2/2

KUZMINSKIY, A.S., FEDOSEYEVA, T.S., AND CHERTKOVA, V.F.

"The role of free radicals in the radiation vulcanizing of elastomers."

Report submitted to the Conference on the Application of ^Large Radiation
Sources in Industry, Salzburg, Austria 27-31 May 1963

ACCESSION NR: AP4017634

S/0190/64/006/002/0241/0246

AUTHORS: Fedoseyeva, T. S.; Kuz'minskiy, A. S.; Heyman, M. B.; Buchachenko, A. L.;
Lebedev, Ya. S.; Chertkova, V. F.

TITLE: Effect of three-dimensional network on free radical annihilation process in
elastomers

SOURCE: Vy'sokomolekulyarnyye soyedineniya, v. 6, no. 2, 1964, 241-246

TOPIC TAGS: free radical, sodium-butadiene, thermal vulcanizate, EPR spectra,
irradiated specimen, chain segment, activation energy, pre-exponential factor

ABSTRACT: The kinetic properties of free radicals formed in the γ -irradiation of
thermally vulcanized sodium-butadiene of various degrees of cross-linkages have
been investigated by the EPR method. The thermal vulcanizate was obtained by pre-
liminary heating of the purified polymer in the press at 220°C and under 50 t/cm²
pressures from 5 to 60 hours. The specimen was irradiated in vacuum at -196°C from
a Co⁶⁰ source of 25 Mrad dose. The EPR spectra of the irradiated specimen were
obtained on the EPR-2 IKhF AN SSSR instrument at -196°C in 20 to 100° intervals. It
is shown that formation of a three-dimensional network prolongs the lifetime of the

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ACCESSION NR: AP4017634

captured radicals. The rate of annihilation of these radicals decreases with increase in the number of cross-linkages. The rate for the same network density is limited by the mobility of the various chain segments. Furthermore, the activation energies and pre-exponential factors for the annihilation of free radicals in "mobile" and "sluggish" regions of the chain have been determined. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics AN SSSR); Nauchno-issledovatel'skiy institut rezinovy promyshlennosti (Scientific Research Institute of the Rubber Industry)

SUBMITTED: 13Nov62

DATE ACQ: 23Mar64

ENCL: 00

SUB CODE: CH

NO REF SOV: 005

OTHER: 000

Card 2/2

ACCESSION NR: AP4042191

S/0190/64/006/007/1308/1312

AUTHOR: Kuz'minskiy, A. S., Fedoseyeva, T. S., Lebedev, Ya. S., Huchachenko, A. L., Zhuravskaya, Ye. V.

TITLE: Nature of the free radicals formed in irradiated polydimethylsiloxanes

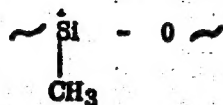
SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 7, 1964, 1308-1312

TOPIC TAGS: polydimethylsiloxane, phenylene derivative, hydroxyphenylene derivative, irradiation, free radical, Gamma irradiation, electron paramagnetic resonance, EPR spectrum, polymer radiation effect

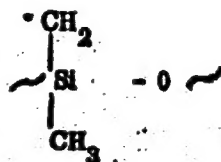
ABSTRACT: The mechanism of action of irradiation on polydimethylsiloxane and its phenylene- and hydroxyphenylene- containing derivatives during the formation of free radicals was investigated by subjecting the polymers to γ -irradiation (Co^{60} = 10000 g. equiv. Ra.) at -196°C in vacuum at a dose of 25 Mrad. Electron paramagnetic resonance spectra showed that two types of radicals (singlet and triplet) are formed corresponding to

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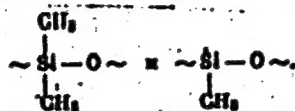
ACCESSION NR: AP4042191



and



The formula for determining the relative concentration of both types of radicals in polydimethylsiloxane is given as:



In phenylene-containing polydimethylsiloxane, the radical



is found, the spectrum of which is determined by the interaction of the unpaired electron

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ACCESSION NR: AP4042191

with the ortho and meta protons of the phenylene ring. The kinetic properties of these free radicals were found to depend on the mobility of the polymer chain segments. "The authors wish to express their gratitude to A. L. Klebanskiy and S. B. Dolgaplosk for their continual attention and assistance in this work." Orig. art. has: 3 figures, 1 formula and 5 chemical structures.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promy'shlennosti (Scientific Research Institute of the Rubber Industry); Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AN SSSR)

SUBMITTED: 28Aug63

ENCL: 00

SUB CODE: OC

NO RRF SOV: 002

OTHER: 002

Card: 3/3

KUZ'MINSKIY, A.S.; FEDOSEYEVA, T.S.; BUCHACHENKO, A.L.

Application of the electron paramagnetic resonance method in
olastomer chemistry, Kauch. i rez. 24 no.7:10-14. 71 '65.

(MIRA 18:8)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti,
i Institut khimicheskoy fiziki AN SSSR.

L 33395-66

ACC NR:AR6012310

SOURCE CODE: UR/0274/65/000/010/B069/B069

AUTHOR: Samoylo, K. A.; Fedosova, T. S.; Gorshenkov, Yu. N.

24
C

TITLE: Frequency division by nonlinear capacitance and negative resistance

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 10B504

REF SOURCE: Tr. Mosk. energ. in-ta, vyp. 55, 1965, 145-152

TOPIC TAGS: frequency division, frequency divider

ABSTRACT: The problem of frequency division by 2 by means of a nonlinear capacitance is considered. Excitation conditions and resonance curves with and without an inertial nonlinear negative resistance are determined from differential equations and a phase portrait. With ratios 3, 4 and higher, the reciprocal nonlinear capacitance is approximated by a trinomial. The second and third harmonics of current are taken into account. The cases with and without periodic solutions and their stability are considered. A study of the phase-plane topology shows that, with a certain amplitude of the external force, a stable singular point exists and, therefore, the division is possible. However, initial conditions are necessary which would keep the operation near the singular point. Thus, with a sufficient amplitude of synchronizing current and with a sufficient capacitance nonlinearity, a hard excitation results; the system should be somehow excited in order to perform

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UDC: 621.396.622

L 33395-66

ACC NR: AR6012310

division. On an oscillation collapse, the division is not restored by itself. Stable division can be obtained by connecting an inertial negative resistance (tunnel diode, dynatron oscillator, etc.) to the circuit. In this case, the division band is widened. The nature of oscillation limiting plays an important part in the above phenomena. Experimental studies with a dynatron oscillator corroborated some theoretical claims, specifically, the presence of hysteresis in the system. With the negative resistance, the division by 3, 4, and 5 was observed. Without the negative resistance, only division by 2 was observed. With certain external-current amplitudes, the division by 3 persisted also without the negative resistance, but did not reestablish itself on oscillation collapse. Eleven figures. Bibliography of 1 title. Yu. Kh. [Translation of abstract]

SUB CODE: 09

Card 2/2

FEDOSEYEVA, T.V.

Studies on the experimental plot in the spring. Est.v shkole no.2:
31-35 Mr-Apr '56. (MIRA 9:7)

1.Uchitel'nitsa semiletney shkoly Gorki II Leninskogo rayona
Moskovskoy oblasti.
(Nature study) (School gardens)

FEDOSEYEVA, V. I.

USSR / Farm Animals, Cattle (Small)

Q-3

Abs Jour: Ref Zhur-Biol., No 2, 1958, 7183

Author : V. I. Oryel, G. I. Smolina, T. Ye. Shilina, N. V. Zhmakina, L. I. Prikhod'ko, V. I. Fedoseyeva, O. S. Shirayeva, R. Sergeyeva.

Inst : Stavropol Agricultural Institute

Title : The Effect of Full Value Protein Feeding on the Thickness of the Wool of Soviet Merino Ewes Two to Twelve Months Old.

Orig Pub: Sb. nauchno-issled. rabot stud. Stavropol'sk. s-kh. in-t, 1956, vyp. 4, 79-81.

Abstract: With biologically full value protein feed the active growth of wool in young ewes occurs at the age of 2 weeks to six months.

Card 1/1

FEDOSEYEVA, V.I.

Variation of unconditioned respiratory reflexes to odorous substances in proportion to their repeated action. Izv. Vor. gos. ped. inst. 46:116-119 '63.

Conditioned motor reflexes to the stimulation of the upper respiratory paths in rabbits. Ibid.:120-125 (MIRA 18:4)

FEDOSEYEVA, Ye. G.

PHASE I BOOK EXPLOITATION

SOV/5565

Belorussov, Nikolay Ivanovich, and Yelena Georgiyevna. Fedoseyeva

Kabeli, provoda i shnury s plastmassovoy izolyatsiyey (Plastic-Insulated Cables, Wires, and Cords) Moscow, Gosenergoizdat, 1960. 319 p. 13,000 copies printed.

Ed.: A. L. Saparova; Tech. Ed.: N. I. Borunov.

PURPOSE: This textbook is intended for students of cable engineering in technical schools of higher and specialized education. It may also be useful to engineers and technicians employed in cable plants and in scientific research or design institutions.

COVERAGE: The book presents a survey of the plastics used in the cable industry and examines their physicommechanical properties. Structural elements and the structural design of Soviet and non-Soviet cables, wires, and cords with plastic insulation are reviewed. The use of plastics for protective sheathing of various cables and wires, along with their maintenance, splicing, and sealing, are described. Production and organization problems of

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Plastic-Insulated Cables (Cont.)

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manufacturing plastic-insulated cables and wires are discussed in detail. Chs. I, II, and IV (except sec. 1, 3, 4, 6, 7, 8, 10, 11, 13, and 15 of Ch. IV) and sec. 2 of Ch. V were written by N. I. Belorussov; Ch. III, sec. 7, 8, and 15 of Ch. IV, and Ch. V (except sec. 2) were written by Ye. G. Fedoseyeva. The remainder of the book was written jointly. The authors thank T. M. Orlovich and N. A. Basov for their help. There are 86 references: 47 Soviet (including 11 translations), 37 English, 1 German, and 1 French.

TABLE OF CONTENTS:

Foreword	3
Ch. I. Plastic-Insulated Cables, Wires, and Cords	7
1. Classification of plastic-insulated-cable production	7
2. Polyethylene-insulated power cables	8
3. Power cables insulated with polyvinyl chloride plasticizer	23
4. Plastic-insulated wires	30
5. Plastic-insulated cords	33

Card 2/6

FEDOSEYEVA, Ye.G.; FEL'DMAN, R.I.; SOKOLOV, S.I.

Interaction between polymers and plasticizers. Part 1: Preparation and properties of poly(vinyl chloride) pastes. Koll.zhur. 23 (MIRA 14:12)
no.6:749-755 N-D '61.

1. Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti i Moskovskiy oblastnoy pedagogicheskiy institut imeni N.K.Krupskoy.
(Polymers) (Plasticizers)

36281

S/069/62/024/002/007/008

B110/B101

15.808a

AUTHORS: Fedoseyeva, Ye. G., Fel'dman, R. I., Sokolov, S. I.

TITLE: Interaction of polymers with plasticizers. 2. Gelatinization of polyvinyl chloride pastes and the properties of the films obtained from them

PERIODICAL: Kolloidnyy zhurnal, v. 24, no. 2, 1962, 230 - 235

TEXT: The following changes take place during the gelatinization of PVC pastes (20-40 min, 140 - 185°C): (1) the decrease in viscosity of the PVC suspension at 20 - 40°C is caused by the decrease in viscosity of the dispersion medium. Between 40 and 90°C, viscosity of the system increases rapidly on account of its gradual gelatinization, and above 90°C viscosity again decreases normally. (2) The change in the mechanical rupture characteristics depends on the gelatinization temperature and time; the conditions of gelatinization depend on the composition of the paste. Films made from pastes filled with chalk, titanium dioxide, barium titanate, kaolin, talcum, magnesium oxide, and litharge showed lower tensile properties and greater hardness. Additional 30 days heat treatment at 120°C

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Interaction of polymers ...

increased the tensile strength from $\sim 27 - 43 \text{ kgf/cm}^2$ to $\sim 47 - 90 \text{ kgf/cm}^2$, changed the relative rupture elongation, and lowered linear strain coefficients. Study of the decomposition temperatures showed that lead compounds proved to be better stabilizers than compounds of other metals. (3) The changes in the electrical characteristics of PVC films were determined in: (a) electrical bulk resistivity (2000 v, direct reading compensation bridge), (b) dielectric permeability and tangent of dielectric loss angle (Schering bridge, 1000 v, 50 cps, 1 min), (c) disruptive strength (cylindrical electrodes dipped into tricresylphosphate, rate of voltage increase 1 kv/sec). The electrical characteristics depend on the quantitative ratio of polymer to plasticizer, on the physical and chemical properties of the plasticizer and on the paste ingredients. Graphite added increases the film conductivity, and the bulk resistivity amounts to $\sim 10^3 \text{ ohm}\cdot\text{cm}$. A study of the dependence of the bulk resistivity on the component ratio showed that the curves ρ versus composition of the polymer systems PVC + tricresylphosphate, PVC + dibutylphthalate, PVC + dioctylphthalate coincide up to a plasticizer content of 45 - 55% by weight. (4) The change in water absorption with temperature and time shows a

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Interaction of polymers ...

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maximum at $20 \pm 1^{\circ}\text{C}$. The aforementioned mechanical, electrical and other properties of PVC films show that blocks, films, etc., having important properties for engineering can be obtained by gelatinization. There are 5 figures and 3 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti, Moskva (Scientific Research Institute of the Cable Industry, Moscow) Moskovskiy oblastnoy pedagogicheskiy institut im. N. K. Krupskoy (Moskovskaya oblast' Pedagogical Institute imeni N. K. Krupskaya)

SUBMITTED: October 20, 1960

Card 3/3

KULAKOVA, Revekka Viktorovna; BELORUSSOV, N.I., retsenzant;
FEDOSEYEVA, Ye.G., red.; LARIONOV, G.Ye., tekhn. red.

[Electric-power cables with plastic insulation] Silovye
kabeli s plastmassovoi izoliatsiei. Moskva, (Eosenergo-
izdat, 1963. 94 p. (MIRA 16:7)

(Electric cables)

(Electric insulators and insulation)

S/067/63/025/002/009/010
A057/A126

AUTHORS: Fedosayeva, S.O., Fel'dman, R.I., Sokolov, S.I.

TITLE: On the polymer-plasticizer interaction. 3. Investigation of stability factors and phase transitions in dispersions of polymer in plasticizers (pastes)

PERIODICAL: Kolloidnyy zhurnal, v. 25, no. 2, 1963, 247 - 252

TEXT: The present investigations were carried out, and the results presented already at the Fifth All-Union Conference on Colloid Chemistry. Stability factors and phase states of polymer dispersions in plasticizers are discussed on the example of polyvinyl chloride dispersion in dibutyl phthalate which is of interest as a two-component system. The preparation of pastes from these components indicates that a part of the polymer has a stabilizing effect. It was of interest to investigate the "lifetime" of such systems. The stability depends on the sedimentation, the particle size, and on the mutual dissolving (homogenization). The "lifetime" of dispersed systems depends on static and dynamic factors connected to the structure and properties of the polymer, the

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On the polymer-plasticizer interaction

S/069/63/025/002/009/010
A057/1126

structure of globules obtained by emulsion polymerization, as well as to phase relations and the ability of the polymer to remain for a longer time in a non-equilibrated state. The process of paste gelatinization is a result of the dissolving stability (homogenization) of the dispersion. The surface layer of globules might be considered as a barrier which prevents the destruction of the globule. Only an increase of temperature will destroy this barrier effecting a subsequent quick dissolving. The process of paste gelatinization at elevated temperatures is discussed by the present authors as a complex of phenomena which effects a total homogenization of the system and the formation of a high-elastic gel by means of a mutual diffusion of polymer and plasticizer. There are 1 figure and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti (Scientific Research Institute of the Cable Industry); Moskovskiy oblast'noy pedagogicheskiy institut im. M.K. Krupskoy (Moscow Regional Pedagogic Institute imeni M.K. Krupskoy); Moskovskiy institut khimicheskogo mashinostroyeniya (Moscow Institute of Chemical Machinery Construction)

SUBMITTED: December 30, 1961

Card 2/2

FEDOSEYEVA, Ye.G.; FEL'DMAN, R.I.; SOKOLOV, S.I.

Interaction of polymers with plasticizers. Part 4: Effect on
rubber of plasticizers migrating on contact with masticated
polyvinyl chloride. Koll.zhur. 26 no.2:258-262 Mr-Ap '64.

(MIRA 17:4)

1. Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti,
Moskovskiy oblastnoy pedagogicheskiy institut imeni Krupskoy i
Moskovskiy institut khimicheskogo mashinostroyeniya.

ACCESSION NR: AP4037179

8/0069/64/026/003/0362/0366

AUTHOR: Fedoseyeva, Ye. G.; Fel'dman, R. I.; Sokolov, S. I.

TITLE: Interaction of polymer with plasticizer
5. The adhesive properties of polyvinylchloride plasticates and their effect on rubbers in contact with them

SOURCE: Kolloidnyy zhurnal, v. 26, no. 3, 1964, 362-366

TOPIC TAGS: polymer plasticizer interaction, polyvinylchloride plasticate, rubber, resin, rubber vulcanization, rubber thermal aging, PVC film adhesion, polychloroprene, perchlorovinyl resin, nitrile rubber, rubber modifier

ABSTRACT: In this series of studies the plasticizer was introduced into the rubber at swelling time or into the resin mix before vulcanization. Such systems may serve as models, since under these conditions the resin comes into contact not with the pure plasticizer but with plasticized polyvinylchloride (PVC) paste, films, etc. from which the plasticizer migrates into the resin. The composition of the PVC test pastes is tabulated. In the present work the influence of PVC pastes added with other compounds (dibutylphthalate, dioctylphthalate, etc.) and films

Cord

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ACCESSION NR: AP4037179

from these materials on properties of the rubbers TS-35 and SK-50 and the adhesive force between the boundary materials were studied. For the preparation of the specimens a 0.5 mm PVC paste layer was placed on top of the 2 mm thick resin mixture, the entire mass vulcanized in foil and subjected to thermal aging. The two layers were then separated and the rubber tested for mechanical properties and specific cubic resistance. The adhesion of paste to resin was determined with a dynamometer. The least amount of adhesion was found in pastes containing only PVC and plasticizer, best in those with PVC and perchlorovinyl resin or rubbers. Such contact did not change tensile strength appreciably, aging at 100C took place almost in the same way in the presence or in the absence of contact. The specific cubic electrical resistance somewhat diminished in the presence of polar plasticizers, whereas it increased during thermal aging of rubber in contact with polyvinyl-chloride plasticates containing polystyrene, polymethylmetacrylate and their monomers. The addition of modifiers to PVC pastes after vulcanization, had a favorable effect on the adhesion to rubber or films forming on gelation of the pastes. The best effect was produced by chlorinated polychloroprene, perchlorovinyl resin, polychloroprene and nitrile rubber. Orig. art. has: 1 figure and 4 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut kabal'noy promy'shlennosti Moskva

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ACCESSION NR: AP4037179

(Scientific Research Institute for Cable Manufacture, Moscow); Moskovskiy oblastnoy pedagogicheskiy institut imeni N. K. Krupskoy (Moscow Region Pedagogic Institute); Moskovskiy institut khimicheskogo mashinostroeniya (Moscow Institute of Chemical Machinery Design)

SUBMITTED: 12Nov62

DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: GC

NO REF SOV: 003

OTHER: 000

3/3

Card

42: AF4023501

...idnyy zhurnal, v. 26, no. 2, 1974.

rubber research, plasticizer, polymer swelling, electric property

ABSTRACT: Mechanical and electrical properties and swelling were studied in various rubber + plasticizer systems. The purpose of the study was to determine the ability of plasticizers to penetrate into rubber at 25 and 145°C from polyvinylchloride layers in contact with rubber, as well as to evaluate the effect of plasticizers on the properties of rubber. Butadiene base TS-35 SK-50 rubber was tested. The following plasticizers were used: dimethyl phthalate, dioctyl phthalate, tricresyl phosphate, pentachlorodiphenyl, sebacic acid polyester, 2,2',2''-nitrile triethanol butyrate and shale oil. When the rubber specimens were swelled in plasticizers at 145°C for 1.5 hours and then kept at 25°C for 24 hours, the plasticizers "bled out." This indicates that the plasticizers migrate from the polyvinylchloride into the rubber mainly during vulcanization. Penta-

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"APPROVED FOR RELEASE: Thursday, July 27, 2000

CIA-RDP86-00513R00041272

AD 001500

AD 001500

APPROVED FOR RELEASE: Thursday, July 27, 2000

CIA-RDP86-00513R00041272(

ACC NR: AP6037030

SOURCE CODE: UR/0069/66/028/006/0888/0893

AUTHOR: Fel'dman, R. I.; Fedoseyeva, Ye. G.; Sokolov, S. I.

ORG: Moscow Oblast Pedagogical Institute im. N. K. Krupskaya (Moskovskiy oblastnoy pedagogicheskiy institut); Scientific Research Institute of the Cable Industry (Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti); Moscow Institute of Chemical Machinery (Moskovskiy institut khimicheskogo mashino-stroyeniya)

TITLE: Properties of filled polymers. Part 2. Combined effect of fillers and softeners on properties of polyisobutylene

SOURCE: Kolloidnyy zhurnal, v. 28, no. 6, 1966, 888-893

TOPIC TAGS: polymer, ~~filled polymer~~, polymer physical chemistry, filler, polyisobutylene, molecular weight, tensile strength, hardness, plasticity, **ELASTICITY**

ABSTRACT: The results are presented of investigation on the combined effect of fillers and softeners on the properties of polyisobutylene with average molecular weights of 200 000, 150 000, and 100 000 estimated according to tensile strength residual and elongation at rupture hardness, elasticity at 70 and 130C, and

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UDC: 541.182:539.412

ACC NR: AP6037030

compressive strain. The dependence of tensile strength and (rupture and residual) elongation on the quality of the softener for a system composed of polyisobutylene, lamp black and mineral wax, passes through the maximum, while the values of hardness and plasticity both at 70 and 130C increased. The results obtained may be explained by the complex effect of softeners on the properties of a filled polymer. For systems composed of polymer, softeners, and fillers, complete additivity of the properties was observed on the plots of filler composition property diagram with respect to tensile strength, plasticity, and rupture and residual elongation, when the filler quantity in the compounds does not exceed the optimum value. Orig. art. has: 4 figures. [Based on authors' abstract] [NT]

SUB CODE: 11/SUBM DATE: 26Aug65/ORIG REF: 008/

Card 2/2

BELORUSSOV, Nikolay Ivanovich, inzh.; GLUPUSHKIN, Petr Mikhaylovich,
kand. tekhn. nauk; KONSTANTINOV, Marsaliy Valer'yanovich,
inzh.; PESHKOV, Izyaslav Borisovich, kand. tekhn. nauk;
PRIVEZENTSEV, Vladimir Alekseyevich, doktor tekhn. nauk;
TROITSKIY, Igor' Dmitriyevich, kand. tekhn. nauk;
FEDOSEYEVA, Yelena Georgiyevna, kand. tekhn. nauk; FRIDMAM,
~~Aron Solomonovich, inzh.; RIZNIKHINA, Ye.G., red.~~

[Cables and wires] Kabeli i provoda. Moskva, Energiia.
Vol.3. 1964. 469 p. (MIRA 17:12)

FEDOSEYEVA, Ye.G.; FEL'DMAN, R.I.; SOKOLOV, S.I.

Interaction of polymers with plasticizers. Part 5: Adhesive capacity of polyvinyl chloride compositions and their effect on the properties of rubber in contact with them. Koll. zhur. 26 no.3:362-366 My-Je '64. (MIRA 17:9)

1. Nauchno-issledovatel'skiy institut kabal'noy promyshlennosti, Moskva, Moskovskiy oblastnoy pedagogicheskoy institut imeni Krupskoy i Moskovskiy institut khimicheskogo mashinostroyeniya.

L 17012-63

EWI(q)/EWI(m)/BDS AFFTC/ASD JD

8/078/63/008/005/015/021

AUTHOR: Perel'man, F. M. and Fedoseyeva, Ye. I.

55
54

TITLE: Yttrium chromates in a $Y(NO_3)_3 - K_2CrO_4 - H_2O$ system

21
PERIODICAL: Zhurnal neorganicheskoy khimii, v. VIII, No. 5, May 1963, 1255-1258

TEXT: The subject of this study was the nature, composition and solubility of chromates formed in a $Y(NO_3)_3 - K_2CrO_4 - H_2O$ system at 25°. The authors discovered that with mixing of dilute aqueous solutions of yttrium nitrate and potassium chromate, depending upon the proportion of the components, double chromates of two types crystallize out: an orange salt of composition $Y_2(CrO_4)_3 \cdot K_2CrO_4 \cdot nH_2O$ (where n is close to 6), and a yellow salt which is evidently a phase of variable composition between $Y_2(CrO_4)_3 \cdot 3K_2CrO_4 \cdot nH_2O$ and $Y_2(CrO_4)_3 \cdot 4K_2CrO_4 \cdot nH_2O$.

Card 1/2

L 17012-63

S/078/63/008/005/015/021

Yttrium chromates in a $Y(NO_3)_3$ -

They conclude further that the normal yttrium chromate -- of composition $Y_2(CrO_4)_3 \cdot 12H_2O$ -- is not formed under the conditions of the experiment. It may be synthesized directly from freshly precipitated moist yttrium hydroxide and chromic anhydride by combination in an aqueous solution with subsequent evaporation of excess water at room temperature. There are 2 tables and 2 figures.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova,
Academii nauk SSSR (Institute for General and Inorganic
Chemistry, im. N. S. Kurnakov, USSR Academy of Sciences)

SUBMITTED: Sept. 6, 1962

Card 2/2

PEREL'MAN, F.M.; FEDOSEYEVA, Ye.I.

Praseodymium chromates in the system Pr, K || CrO₄, NO₃ - H₂O .
Zhur. neorg. khim. 8 no.11:2603-2607 N '63. (MIRA 17:1)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.
Kurnakova AN SSSR.

L 06279-67	EWI(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)	RR
ACC NR: AP6025070	(A)	SOURCE CODE: UR/0115/66/000/006/0008/0012
AUTHOR: <u>Osipov, G. I.</u> ; <u>Lopashev, D. Z.</u> ; <u>Fedoseyeva, Ye. N.</u>		
ORG: none		
TITLE: Methods for measuring noise characteristics of machinery		
SOURCE: Izmeritel'naya tekhnika, no. 6, 1966, 8-12		
TOPIC TAGS: acoustic measurement, acoustic noise, machine noise		
<p>ABSTRACT: A new Soviet Standard, GOST 11870-66 "Machinery. Noise characteristics and methods of determining them" is described; the Standard was approved by the Committee for Standards, Measurements and Instruments early in 1966. Noise levels produced by a machine (of other equipment) in air within octave bands with geometric-mean frequencies of 63, 125, 250, 500, 1000, 2000, 4000, 8000 cps, noise directional pattern, and noise-power level constitute the principal noise characteristics of the machine (equipment). Four methods of determining noise characteristics are established: (a) in a free sound field, in anechoic sound chambers, in rooms having sound absorption, or outdoors; (b) in a reflected sound field, in reverberation chambers, or in resounding rooms; (c) in ordinary rooms by means of a reference noise source; (d) at 1 m from the outer surface of the machine. The four methods of noise measurement are specified in detail. Desirability of manufacturing noise meters, octave filters, measuring</p>		
Cord 1/2	UDC:534.837.083	

34
B

L 06279-67

ACC NR: AP6025070

microphones, analyzers, level recorders, "whose industrial production on a required scale does not exist at present", is noted. Orig. art. has: 3 figures, 10 formulas, and 2 tables. D

SUB CODE: 20 / SUBM DATE: none

Card 2/2 *esp*

PRIDOSHYNVA, Ye.O.; TRINT'YAKOVA, A.A.; VERSLER, G.S., kandidat tekhnicheskikh nauk, redaktor; YAKOBSON, A.Kh., redaktor; MATISHEN, Z.M., tekhnicheskii redaktor

[Electric supply for motion-picture apparatus] Elektropitanie kinoustanovok. Moskva, Gos.izd-vo "Iskusstvo," 1955. 306 p.
(Motion-picture projectors)
(MIRA 9:3)

FEDOSEYEVA, Yelena Osipovna; KYSYMONT, L.O., red.; TUMANOVSKIY, R.F., tekhn.
red.; SUSHKEVICH, V.I., tekhn. red.

[Amplifying devices] Usilitel'nye ustroistva. Moskva, Gos.izd-vo
"Iskusstvo," 1961. 310 p. (MIRA 14:6)
(Amplifiers (Electronics))

FEDOSEYEVA, Yelena Osipovna; EYSYMONI, L.O., red.; BORISOVA, V.U.,
tekhn. red.

[Sound reproducing equipment formation-picture theaters]
Zvuko-vosproizvodiashchaia apparatura kino-ustanovok. Mo-
skva, Izd-vo "Iskusstvo," 1963. 279 p. (MIRA 16:12)
(Motion pictures, Talking—Equipment and supplies)

1. 200-letie A.K. Nartova
DRUZHINSKIY, I.A.; FEDOSNIYVA, Ye.P.; RZHONSNITSKIY, B.N., kandidat tekhnicheskikh nauk, redaktor.

[A.K.Nartov's "Theater of machines"; for the 200th anniversary of the death of A.K.Nartov, author of the first Russian work on machines] "Teatrum makhinarum" A.K.Nartova; k 200-letiu so dnia smerti A.K.Nartova - avtora pervogo russkogo truda o stankakh. Leningrad, Gos.publichnaia biblioteka im. M.M.Saltykova-Shchedrina, 1956. 89 p.

(Nartov, Andrei Konstantinovich, 1693-1756)

(MLRA 9:6)

FEDOSEYEVA, E. V.

USSR / Zooparasitology. Parasitic Protozon.

G-1

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 33904

Author : Khalotskiy, A.M., Zasukhin, D. N., Orlov, G. A., Emelyan-
chik, E. K., Fedoseeva, E. V.

Inst : Not given

Title : Data on Toxoplasmosis. The Problem of Toxoplasmosis in
the Psychoneurologic Clinic. -- Materialy k izucheniyu toksoplasmoza. Problema toksoplazma v psikhonovrologicheskoy klinike.

Orig Pub : Zh. nevropatol. i psikiatrii, 1957, No. 3, 360-369

Abstract : Clinical and serological examinations were conducted on 63 patients in the psychiatric hospital, among them 43 with a suspected congenital or acquired toxoplasmosis and 20 with various diseases (schizophrenia, epilepsy, rheumatic encephalitis, etc.). In the first group the number of positive

Card 1/2

1

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 33904

Abstract : reactions with staining agent and BSR was three times that in the second. Of 12 encephalitis patients of mixed etiology, nine produced positive reactions in great dilutions.

Card 2/2

PEROVA, L.I. (Leningrad, 7-ya Krasnoarmeyskaya ul., d.20, kv.8); ~~FEDOSHNEVA~~,
Yu.I.

Phlegmons of the gastrointestinal tract in children. Vest.khir. 83
no.8:48-51 Ag '59. (MIRA 13:1)

1. Iz khirurgicheskogo otdeleniya (zav. - D.B. Avidon) detskoy bol'-
nitsy im. d-ra Baukhfusa (glavnyy vrach - Yu.S. Chistyakova) i klini-
ki khirurgii detskogo vozrasta (zav. - prof. A.V. Shatskiy [deceased])
Leningradskogo pediatricheskogo meditsinskogo instituta.
(PHLEGMON in inf. & child)
(GASTROINTESTINAL DISEASES in inf. & child.)

FEDOSYEV, Z.K.; FREYDLIN, G.M.

Chemical removal of formic acid from acetic acid with potassium permanganate and bichromate. Khim.prom. no.5:306-307 J1-Ag '56.

1. Yerevanskiy zavod "Polivinilatsetat."
(Acetic acid) (Formic acid) (Potassium salts)

FEDOSEYEVA, Z. N.

FEDOSEYEVA, Z. N.: "Environmental factors and microorganisms in the phenomena of degeneration of the causative agent of millet smut—*Sphacelotheca panici miliacei* (pers) Bub." Min Higher Education Ukrainian SSR. Khar'kov Order of Labor Red Banner State U imeni A. M. Gor'kiy. Khar'kov, 1956. (Dissertation for the Degree of Candidate in Biological Science.)

Knizhnaya Letopis'
No 32, 1956. Moscow.

FEDOSEYEV, Z.M.
FEDOSEYEV, Z.M.

New studies on the biology of *Spacelotheca panici millacei* (Pers.)
Bub. [with summary in English]. Ukr.bot.zhur. 14 no.4:65-70 '57.
(MIRA 11:1)

1. Institut biologii Kharkivs'kogo derzhavnogo universitetu im.
O.M. Gor'kogo, viddil patologii.
(Ustilaginae) (Millet--Diseases and pests)

FEDOSEYEVA, Z.N. [Fedosiieva, Z.M.]; MESHCHERYAKOVA, R.I.;
YAROSHENKO, T.V.

Tymofii Danylovych Strakhov. Ukr. bot. zhur. 18 no.3:102-107
'61. (MIRA 14:12)
(Strakhov, Tymofii Danylovych, 1890-1960)

FEDOSEYEVA, Z.N.

Micro-organisms antagonistic to Ustilago zeae Unger. Mikrobiologiya 31 no.3:499-501 My-Je '62. (MIRA 15:12)

1. Nauchno-issledovatel'skiy institut biologii Khar'kovskogo gosudarstvennogo universiteta.
(SMITS) (CORN(MAIZE)—DISEASES AND PESTS) (ANTIBIOSIS)

VYDRIN, V.N.; AMOSOV, P.N.; FEDOSIYENKO, A.S.; KRAYNOV, V.I.

Measuring irregularities of angular velocity in rolls. Izv.
tekh. no.11:31-34 N '64. (MIRA 18:3)

VYDRIN, V.N.; FEDOSIYENKO, A.S.

Kinematic conditions in the continuous rolling process. Izv.
vys. ucheb. zav.; chern. met. 8 no.2:93-98 '65.

(MIRA 18:2)

1. Chelyabinskiy politekhnicheskiy institut.

VYDRIN, V.N.; FEDOSIYENKO, A.S.

Theory of the dynamic operating conditions of continuous cold rolling mills. Izv.vys.ucheb.zav.; chern.met. 8 no.8:65-68 '65. (MIRA 18:8)

1. Chelyabinskiy politekhnicheskii institut.

FEDOSOV, A.A.

VASIL'YEV, A.P., dotsent, kandidat tekhnicheskikh nauk; IVANOV, K.I.,
kandidat tekhnicheskikh nauk; LYCALOV, V.V., inzhener;
FEDOSOV, A.A., inzhener.

Study of thermal piercing in mines. Gor. zhur. no.7:52-56
Jl '56. (MLRA 9:9)

(Boring)

FEDOSOV, A.A.

Double nonsectional shield with leading supports for mining
thick steeply pitching seams by means of hydraulic giants.
Trudy Inst.gor.dela Sib.otd. AN SSSR no.2:94-108 '59.
(MIRA 13:5)

(Hydraulic mining) (Mine timbering)

FEDOSOV, A.A.

Hydraulic mining combined with the shield system. Trudy Inst.
gor. dela Sib. otd. AN SSSR no.3:21-47 '60. (MIRA 14:4)
(Hydraulic mining)

BATUYEV, G.S., kand. tekhn. nauk; FEDOSOV, A.A., kand. tekhn. nauk; YEFREMOV,
A.K., inzh.

Collision of solid bodies in case of elastoplastic deformations in
the contact area. Rasch. na p. zh. no. 10:363-390 '64. (MIRA 18:1)

FEDOSOV, A.F.; BOGDANOV, Yu.I.

Indicators of the functional state of the adrenal cortex before and after the administration of ACTH in practically healthy people. Nauch. trudy Riaz. med. inst. 15:141-143 '62. (MIRA 17:5)

1. Kafedra fakul'tetskoy terapii (zav. kafedroy - prof. I.B.Likhtsiyer, nauchnyy rukovoditel' - Ya.M.Miloslvaskiy) Ryazanskogo meditsinskogo instituta imeni Pavlova.

CIA-RDP86-00513R00041272

~~of American citizens who are~~

CIA-RDP86-00513R000412720

FEDOSOV, A.I.

137-58-5-10362 D

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 210 (USSR)

AUTHOR: Fedosov, A.I.

TITLE: An Investigation of the Effect of Surface Treatment on the Erosion Resistance of Austenitic Steels for Gas Turbine Buckets (Issledovaniye vliyaniya poverkhnostey obrabotki na erozionnuyu stoykost' austenitnoy stali dlya lopatok gazovykh turbin)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to the Tsentr. n. -i. in-t tekhnol. i mashinostr. (Central Scientific Research Institute of Technology and Mechanical Engineering), Moscow, 1957

ASSOCIATION: Tsentr. n. -i. in-t tekhnol. i mashinostr. (Central Scientific-Research Institute of Technology and Mechanical Engineering), Moscow

1. Steel--Erosion 2. Turbine blades--Surfaces

Card 1/1

PROSVIRIN, V.I.; FEDOSOV, A.I.

Erosion wear and wear protection of austenite steels used for
gas turbine vanes [with summary in English]. Inzh.-fiz.sbur.
no.1:6-14 Ja '59. (MIRA 12:1)

1. Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii
i mashinostroyeniya, Moskva.
(Steel--Hardening) (Mechanical wear)

FEDOSOV, A. I.

Electrocapillary motion of droplets. Zhur.fiz.khim.29 no.5:822-831 My'55. (MIRA 8:12)

- 1. Chitinskiy gosudarstvennyy pedagogicheskiy institut
(Electrocapillary phenomena)**

TARNOVSKIY, A.; FEDOSOV, A.I., dotsent, nauchnyy rukovoditel'

Polarization of a conductive cylinder in a homogenous electric field. Uch.sap.Kuib.gos.ped.inst. no.37:3-9 '62.

(MIRA 16:1)

(Electric fields)

(Polarization (Electricity))

USSR/ Chemistry - Physical chemistry

Card 1/2 Pub. 147 - 30/35

Authors : Fedosov, A. I.

Title : Effect of surface-active substances on the movement of drops in liquids

Periodical : Zhur. fiz. khim. 30/1, 223-227, Jan 1956

Abstract : Quoting the research work of various Soviet and foreign scientists the author shows (by experiment) that the existence of a film of insoluble surface-active substances results in partial retardation of the tangential motion of a drop over a free surface of a liquid which in turn causes intensive vortex formation in the liquid mass leading to greater losses of mechanical energy. It is explained that diffusion processes in the case of

Institution : The Chita State Pedagogical Inst.

Submitted : May 16, 1955

Card 2/2 Pub. 147 - 30/35

Periodical : Zhur. fiz. khim. 30/1, 223-227, Jan 1956

Abstract : soluble surface-active substances decreases the damping effect on the tangential motion of the drop. The rate of motion of the drop was determined not only by the external mass force (gravity) but also by the effect of the surface forces; the magnitude of the surface force was determined by the concentration of the surface-active substance at the surface of the drop. Thirteen references: 8 USSR, 1 Pol., 2 French, 1 Germ. and 1 Eng. (1911-1948).

FEDOSOV, A.I.

USSR/Physical Chemistry - Liquids and Amorphous Bodies. Gases, B-6

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 60970

Author: Fedosov, A. I.

Institution: None

Title: Thermocapillary Movement

Original

Periodical: Zh. fiz. khimii, 1956, 30, No 2, 366-373

Abstract: Considered is the movement of a liquid which occurs in the presence of a temperature gradient in the surface layer (thermocapillary movement) within a shallow cell the width and length of which are considerably greater than its depth, and in the case of a movement of a liquid in a viscous medium in the presence of a temperature gradient in this medium. It is shown that with a small depth of heating of the surface layer the thermocapillary movement can become superimposed over convection. The theory is applicable over a relatively wide interval of gradients.

Card 1/1

SOV/81-59-13-45251

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 13, p 76 (USSR)

AUTHOR: Fedosov, A.I.

TITLE: The Braking of Tangential Motions by Surface-Active Substances

PERIODICAL: Uch. zap. Kuybyshevsk. gos. ped. in-t, 1958, Nr 21, pp 177 - 193

ABSTRACT: The problem of retarding the movement of drops in a liquid by surface-active substances has been considered theoretically for the case of small Reynolds numbers. The solution of the equation of convective diffusion of distributed substance to a spherical drop has been found and the concentration at the surface of the drop has been calculated. In the calculation of the braking of the drop movement the dependence of the diffusion flow to the surface on the value of the polar angle θ is taken into account. The calculated value of braking at the fall of the drop in a solution is essentially higher than the value calculated earlier (A.N. Frumkin, V.G. Levich, Zh. fiz. Khimii, 1947, Vol 21, 1183).

Yu. Pleskov

Card 1/1

FEDOSOV, A.I.

Deceleration of the motion of gas bubbles by soluble surface-active substances in the case of large Reynolds numbers and a high diffusion rate. Uch.zap.Kuib.gos.ped.inst. no.29:73-77 '59.

(MIRA 14:8)

(Reynolds number) (Gas dynamics) (Diffusion)

5 (4)

AUTHOR:

Pedoso, A. I. (Kuybyshev)

SOV/76-33-8-1/39

TITLE:

Retardation of Gas Bubble Motion by Surface-active Substances at Moderate Reynolds Numbers

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 8, pp 1681-1686 (USSR)

ABSTRACT:

The first investigations of the motion of gas bubbles (G) at moderate Re were carried out by (Ref 1), but in pure liquid only. Additions of surface-active substances (SS) cause a considerable retardation of the tangential motion of the back part of (G), since (SS) adsorb themselves at the (G), and form a film at the back part of (G). The surface covered by the turbulent "tail" increases considerably, and reduces the velocity of motion of (G). The size of this retarded area is investigated as well as the concentration of (SS) at which the pollution of the liquid must be taken into account. Also, the case is studied in which a soluble or insoluble (SS) is under consideration, and the deposition of (SS) on the surface of (G) is determined by the diffusion rate. Considerations start from two assumptions: 1) In the retarded parts, the force caused by the gradient of the surface tension is of the same order of magnitude as the dissipation force (D) acting upon the solid surface, and larger

Card 1/2

Retardation of Gas Bubble Motion by Surface-active
Substances at Moderate Reynolds Numbers

SOV/76-33-8-1/39

than the (D) acting upon the unretarded liquid surface, so that the limit of the retarded part can be determined approximately by an equation (2); 2) In the presence of the (SS), the velocity of motion of the liquid up to the limit of the retarded part is hardly different from that of the pure liquid, so that these may be regarded as the same by first approximation. The two cases - of a soluble and insoluble (SS) - are explained separately, a convective diffusion being assumed for the latter case. The size of the (G) surface on which the tangential motion may be considered greatly retarded is calculated approximately, then an evaluation of the (SS) concentration is made in which the (G) surface may be considered completely purified of (SS) and, on the other hand, in which (G) moves like a solid sphere. There are 1 figure and 3 Soviet references.

SUBMITTED: February 8, 1957

Card 2/2

21154

S/032/61/027/004/013/028
B103/B201

26.2122
AUTHOR:

Fedosov, A. I.

TITLE:

Methods of testing the material of gas turbine blades for strength in a dust-laden gas current

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 4, 1961, 444-446

TEXT: The author describes methods of testing gas turbine blades in an experimental turbine 3FTY-850 (EGTU-850) for Diesel oil (Fig. 1). He has been urged to undertake the present investigation by the marked differences observed between usual testing conditions and those occurring in a real turbine. The methods, which yield reliable data as regards erosion and strength of the blades, have been worked out at the author's institute. The experimental blades were constructed in such a manner as to permit them to be tested simultaneously under different tensile stresses brought about by applying different loads to the turboblades. The blade models were subjected to stress until they broke. The broken parts were caught in a collecting device 3. The prescribed amount of dust content in the gas was attained by introducing ash (0.1 g/kg gas, particle size

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B103/B201

X

Methods of testing the material ...

up to 20 μ) into the combustion chamber 1 by means of equipment 4. The testing conditions were evaluated on the basis of the following characteristics: 1) The speed of rotor 10 was controlled by a speedometer and automatically corrected by regulating the air supply to the combustion chamber by means of an electronic regulator ЭПИ-52 БТМ (ERT-52 ВТИ), the latter being connected to a speedometer of the type ДА-10 (D-10). The temperature of the blade metal was measured by means of chromel-alumel thermocouples mounted in special blades. 3) The ash concentration was calculated from the ash- and gas consumption per unit time. 4) The size of ash particles was determined microscopically. 5) The gas velocity in the blade apparatus, and 6) that of the ash particles were determined from the triangle of velocity vectors. The strength of the blades was established from the resistance to erosion wear (weight loss per unit time) and from the time it took until they broke. The structural strength of the blade metal was evaluated on the basis of the

coefficient: $K = \frac{\sigma_{\text{blade}}}{\sigma_{\text{sample}}}$, where σ_{blade} and σ_{sample} denote the tensile stresses, under which the blade in the turbine or in the test machine,

Card 2/6

21154

S/032/61/027/004/013/028
B103/B201

Methods of testing the material ...

respectively, suffers breakdown within the same time and at the same temperature. The author's methods permit tests to be conducted at a tensile strength up to 30 kg/mm^2 , a metal temperature up to 750°C and an ash particle content up to 3 g per liter of gas (size 10μ and over). The character of the blade destruction changes depending on the ratio between these factors. If the former two factors prevail, a fracture is caused due to exhaustion of the long life strength of the blade material. A stronger erosive action will cause wear to prevail, and breakdown will take place due to thinning. Erosion strengths of steel blades with and without protective coating are intercompared. Type ЭИ612 (EI612) and ЭИ680 (EI680) were saturated by means of thermal diffusion with chromium and nitrogen, the latter type with chromium and aluminum. Ash (particles up to 20μ) was introduced in an amount of 0.1 g per kg of gas. The respective rate was 160-220 m/sec. Temperature of blades 650°C . EI680 was tested at a stress of 16 kg/mm^2 , EI612 at 22 kg/mm^2 . The saturation of steel with aluminum and chromium has been found to reduce the strength of turbine blades. Chromium plating with subsequent nitriding has no appreciable effect upon the strength of the blades. The structural

Card 3/6

21154

S/032/61/027/004/013/028
B103/B201

Methods of testing the material ...

strength of the metal amounted to $K = 0.73 \div 0.94$. Blades saturated with chromium and nitrogen by thermal diffusion, by contrast, suffered no wear worth mentioning, whereas the nontreated blades lost weight by 0.5 mg/hr. The author, therefore, recommends the latter kind of surface treatment as a means of protecting the blades against erosion, without impairing their strength. There are 2 figures.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut
tekhnologii i mashinostroyeniya (Central Scientific
Research Institute of Technology and Machine Building)

Card 4/6

AL 10551-66	EWI(m)/EWP(w)/EWA(d)/	WP(t)/EWP(k)/EWP(z)/EWP(h)/EWA(a)	JD/EM/EM
ACC NR: AP6000784		UR/0096/65/000/009/0034/0038	
AUTHOR: Gorelkin, B.G. (Engineer);	Trasil'nikov, S.M. (Engineer);	Fedorov,	
Evich, L.A. (Engineer); Yelizarov, D.	(Candidate of Tech. Sci.);	Fedorov,	
A.I. (Candidate of Tech. Sci.)			
ORG: TSNIITMAKH; MBI			
TITLE: The problem of the stresses acting in a steam pipe made of austenitic steel			
SOURCE: Teploenergetika, no. 9, 1965, 34-38			
TOPIC TAGS: stress analysis, pearlite steel, austenite steel, steam power plant, pipe/1Kh18N12T steel			
<p>ABSTRACT: The high temperature coefficient of linear expansion and the low coefficient of thermal diffusivity of austenitic steel bring about, in the wall of the steam pipe, higher temperature and compensation stresses than in steam pipes made of pearlitic steel. In the experiments the initial pressure of the steam before the turbine was 170 bars and the temperature was from 550 to 570°C. Each block of the unit, with a power up to 150 Mwt, consisted of a turbine and two boilers connected with the turbine by four lines of main steam piping (two from each boiler). The steam piping tested was made of 1Kh18N12T steel and had a diameter and a wall thickness of 219 x 27 mm. Measurement of the stresses at high steam</p>			
Card 1/2	UDC: 624.058.5:621.772.4.001.45		

I 10551-66

ACC NR. AP6000784

temperatures was effected with type MBI mechanical tensometers. The tangential stresses were evaluated by calculation and, knowing the tangential stress, it is possible to calculate the tangential deformation. Finally, the axial stress can then be calculated. A series of tests was run to determine the dependence of the tangential stresses on the rate of heating of the pipe up to a temperature of 550°C. Results are shown graphically. If the "rate" stresses are added to the static stresses measured with the tensometers, the authors arrive at a value on the order of 15 kg/mm² which is close to the standard yield point for 1Kh18N12T steel. In conclusion, the proposition is advanced that one possible reason for the failure of welded joints in austenitic steel steam pipes is the increased magnitude in the sum of the stresses brought about by the superposing of significant "rate" stresses, connected with variations in the steam temperature, on top of the static stresses. Orig. art. has: 4 formulas and 5 figures.

SUB CODE: 11,13 SUBM DATE: 00

ORIG REF: 003 OTH REF: 000

Card

2/2 pw

L 44811-66 EWT(1)/EWT(m)/T/EWP(t)/ETI IJP(c) JD/JG/GG
ACC NR: AP6032022 SOURCE CODE: UR/0386/66/004/006/0220/0226

AUTHOR: Ivanov, N. R.; Shuvalov, L. A.; Yadosyuk, R. M.; Pluzhnikov, K. A. ⁶⁹

ORG: Institute of Crystallography, Academy of Sciences, SSSR (Institut kristallografi Akademii nauk SSSR) ³

TITLE: Proof of the existence of two sharply distinct ferroelectric phases in $\text{NaNH}_3(\text{SeO}_3)_2$ ²

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 4, no. 6, 1966, 220-226

TOPIC TAGS: ferroelectricity, phase transition, second order phase transition, electric polarization, dielectric constant, temperature dependence

ABSTRACT: The authors investigated the ferroelectric properties of large homogeneous single crystals of $\text{NaNH}_3(\text{SeO}_3)_2$ grown from the aqueous solution by the method of dropping the temperature, having a Curie point $T_C = -78.6^\circ\text{C}$ and a melting temperature $111 \pm 0.5^\circ\text{C}$. Measurements of the low-frequency (800 cps) dielectric constant at a measuring-field intensity 10 v/cm were made for three mutually perpendicular cuts oriented parallel to the principal sections of the optical indicatrix: the crystallographic directions were taken to be the principal axes of the indicatrix, so that the x, y, and z axes were directed respectively along the acute and obtuse bisectors and the normal to the plane of the optical axes. The temperature dependence of the rotation of the indicatrix $\phi(T)$ about the y axis and the components of the spontaneous

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L 44811-66

ACC NR: AP6032022

polarization were measured. The measurements have demonstrated conclusively the presence of one more phase transition in $\text{NaH}_2(\text{SeO}_3)_2$ at -172.5°C , at which a jumpwise decrease takes place in the components of the dielectric constant. The transition has a temperature hysteresis of 10.5° . Consequently, the transition is of first order. The temperature dependence of the various components of the dielectric constant, of the spontaneous polarization, and of the coercive field were also investigated. An analysis of the obtained information leads to the following conclusions:

1. $\text{NaH}_2(\text{SeO}_3)_2$ undergoes two phase transitions, one at -78.6°C (second order but close to first order) from the paraelectric α phase to the ferroelectric β phase.
2. In the absence of external action, the γ phase (or part of it) can remain metastable in the crystal in the range $-162^\circ\text{C} < T < T_c$. An external electric field or mechanical action can transform the crystal to the β phase which is stable in this temperature region.
3. In the γ phase, the vector of spontaneous polarization lies in the xz plane (π plane), but in the β phase there appears a y component of the polarization, as a result of which the crystal becomes triclinic.
4. As a result of these stresses and of the noncollinearity of the polarization vector P_s in different domain systems, it becomes possible to display visually the trace of the domain structure.
5. Since the motion of the domain walls takes place in a field of inhomogeneous mechanical deformation, an appreciable domain contribution to the dielectric constant is produced.
6. The difference between the effects brought about by the x and y polarization components, and the different behavior of these components themselves and of the coercive fields corresponding to them offer definite evidence of two es-

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ACC NR: AP6032022

essentially different mechanism for the occurrence of spontaneous polarization in $\text{NaH}_3(\text{SeO}_3)_2$. Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 20Jun66/ ORIG REF: 001/ OTH REF: 006

Card 3/3 blg

L 27937-66 EWT(1)/EEC(k)-2/EWA(h)

ACC NR: AP6017781

SOURCE CODE: UR/0115/65/000/007/0008/0012

AUTHOR: Fedotov, A. I.; Kublanov, B. M.

ORG: none

TITLE: Interference device for measurement of displacements

SOURCE: Izmeritel'naya tekhnika, no. 7, 1965, 8-12

TOPIC TAGS: interferometer, computer memory, mercury lamp

ABSTRACT: For measuring large linear displacements, the authors have developed a device consisting of an interference transducer, a computing-memory device and a printer. The transducer is a classic Michaelson interferometer. A mercury microlamp bulb is used to provide monochromatic light needed for measurement of large mirror displacements. A schematic diagram is presented for the simple computing device which counts the lines passed as the mirror is displaced. The maximum movement measurable is 50 mm; error is 0.2 micron; maximal rate of movement of mirror is 0.02 m/sec. Orig. art. has: 5 figures and 1 formula. [JPRS]

SUB CODE: 20, 09 / SUBM DATE: none

Card 1/1 B.L.G.

UDC: 535.417:531.71

FEDOSOV, A.I.

Derivation of transformations of Galilean coordinates. Izv. vys.
ucheb. zav.; fiz. no. 3:175-176 '64. (MIRA 17:9)

1. Kuybyshevskiy pedagogicheskiy institut imeni Kuybysheva.

FEDOSOV, A. V.

Zhivotnyy mir Bryanskoy Oblasti (The animal world in Bryansk Oblast by)

A. V. Fedosov i K. N. Nikitin. Bryansk, "Bryanskiy Rabochiy", 1951.

88 p. illus.

"Kratkiy...Literaturny": p. 84--(85)

So: 127N/5

729.9

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FEDOSOV, A.V.

Distribution of the white stork in Bryansk Province. Ornitologiya
no.2:147-149 '59. (MIRA 14:7)
(Bryansk Province---Storks)

FEDOSOV, A.V.

Studies on the effect of elk on forest regeneration in Bryansk Province. Soob.Inst.lesa no.13:80-88 '59. (MIRA 13:2)

1. ~~Bryansk~~ ~~ly~~ lesokhonyaystvennyy institut.
(Bryansk Province—Elk)
(Bryansk Province—Forests and forestry)

L 16577-65 EWT(m)/EWP(t)/EWP(b) BAEW(c)/EWD(L)/ESD(gs)/AFWL/ASD(s) -5/
AS(mp)-2/ASMD(t)/IOP(s) 5B

ACCESSION NR: AP5000297

S/0070/64/009/006/09/1/0929

AUTHORS: Dobrzzhanskiy, G. F.; Belyayev, I. M.; Petrov, I. P.;
Pytkin, Yu. F.; Fedosov, A. Ye.; Chernykh, K. S.

TITLE: Transmission spectra of copper chloride and bromide single crystals

SOURCE: Kristallografiya, v. 9, no. 6, 1964, 928-929

TOPIC TAGS: copper compound, single crystal, infrared spectrum, optical
crystal growth

ABSTRACT: The transmission spectra of single crystals of copper
chloride and bromide were measured in the infrared region of the
spectrum. The crystal growth procedure was described by some of
the authors elsewhere (Collection. Rost. Kristallografiya, 1961, no. 1, p. 106). Particular attention was paid to the
reagent and thorough cleaning of the produced crystal.

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NAME: AP500-0297

sodium chloride (up to 15 μ) and potassium bromide, up to 25 μ . A Hilger H-800 spectrometer was used above 25 μ (cesium iodide prism). The measurements show that the single crystals have good transmission on the order of 80% without selective absorption bands, up to $\sim 18 \mu$ for the chloride and 24 μ for the bromide, with a long-wave transmission limit at 22 and 32 μ , respectively.

RECEIVED: 09Jun64

ENCL: 00

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ACCESSION NR: AP5000297

OP, SS

NR REF SOV 001

OTHER 000

Card 3/3

L 17537-63

ENT(d)/FCC(w)/EDS AFFIC/LJP(0)

ACCESSION NR: AF3004413

S/0020/63/151/004/07116/0789

AUTHOR: Fedosov, B. V.

51
52L

TITLE: Asymptotic formulas for the characteristic values of the Laplacian operator in polyhedral regions

SOURCE: AN SSSR. Doklady*, v. 151, no. 4, 1963, 785-789

TOPIC TAGS: Laplace operator, Tauberian theorem

ABSTRACT: The author considers the boundary-value problem

$$\Delta u = -v^2 u$$

in the polyhedral region D with the boundary condition $u = 0$ or $\partial u / \partial n = 0$. Then using the trace of a Green function of a boundary-value problem of mixed type for a wave equation and applying Tauberian-type theorems of Marchenko (Izv. AN SSSR, ser. matem., 19, 1955, 381), he obtains asymptotic results.

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L 17537-63

ACCESSION NR: AP3004413

2

"The author takes the opportunity to express his deep gratitude to professor V. B. Lidskom for proposing the problem and for unceasing aid in the work." Orig. art. has: 3 formulas and 2 figures.

ASSOCIATION: Moskovskiy fiziko-tekhnicheskii institut (Moscow Physics-Technical Institute).

SUBMITTED: 02Feb63

DATE ACQ: 21Aug63

ENCL: 00

SUB CODE: MM

NO REF SOV: 003

OTHER: 001

Card 2/2

ACCESSION NR: AP4042781

S/0020/64/157/003/0536/0538

AUTHOR: Fedosov, B. V.

TITLE: Asymptotic formulas for the eigenvalues of the Laplace operator in the case of a polyhedron

SOURCE: AN SSSR. Doklady*, v. 157, no. 3, 1964, 536-538

TOPIC TAGS: asymptotic property, eigenvalue, boundary problem, Green function, approximation calculation

ABSTRACT: Asymptotic values of the boundary problem are investigated for the equation

$$-\Delta u = k^2 u, \quad (1)$$

considered in an m-dimensional polyhedron, under boundary conditions that either the function or its derivative vanish on the fact of the polyhedron. It is shown that in the case of a polyhedron the

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ACCESSION NR: AP4042781

remainder term in the asymptotic formula for an arbitrary finite domain D with piecewise-smooth boundary (given, for example, by Courant and Hilbert in *Methoden der mathematischen Physik*, v. 1, ch. VI, Interscience, N. Y., 1931)

$$n(k) = \frac{\text{mes } D}{2^m \pi^{m/2} \Gamma(m/2+1)} k^m + O(k^{m-1} \ln k). \quad (3)$$

can be estimated more accurately than in the formula. In addition, the next higher terms can be derived for the functions obtained by successively integrating $n(k)$ ($n(k)$ = number of eigenvalues of the problem, not exceeding k^2). The results are expressed by the following theorem. Let the boundary problem (1) be specified on an m -dimensional polyhedron. Then for $0 \leq p \leq m-1$ and for $k \rightarrow \infty$ we have

$$\frac{1}{\Gamma(p+1)} \int_0^k (k-t)^p dn(t) = \sum_{l=1}^m a_l \frac{\Gamma(l+1)}{\Gamma(p+l+1)} k^{p+l} + O(k^{m-1}). \quad (4)$$

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ACCESSION NR: AP4042781

Explicit expressions are given for the first three coefficients a in this formula, but the remaining coefficients can be given only in terms of the Green's function of the mixed problem for the wave equation on a spherical polyhedron. The formula is a generalization of an earlier result by the author (DAN v. 151, no. 4, 1963), concerning a planar polygon. The proof is analogous. "The author thanks Professor V. B. Lidskiy for valuable advice and hints." Orig. art. has: 8 formulas. Presented by Academician A. A. Dorodnitsyn.

ASSOCIATION: Moskovskiy fiziko-tekhnicheskiy institut (Moscow Physicotechnical Institute)

SUBMITTED: 13Jan64

ENCL: 00

SUB CODE: MA

NR REF SOV: 003

OTHER: 001

3/3

KUZNETSOV, N.V.; FEDOSOV, B.V.

Asymptotic formula for the eigenvalues of a circular membrane.
Dif. urav. 1 no. 12:1682-1685 D '65. (MIRA 18:12)

1. Moskovskiy fiziko-tehnicheskii institut. Submitted
October 1964.

YAKUBOVSKIY, A.M., mashinist-instruktor; FROLINKO, M.P., mashinist-instruktor;
YAROSHEVICH, V.S., mashinist; YERKIMAYEV, Ye., mashinist;
BABANAZAROV, A.M., mashinist; FEDOSOV, D. Ye.; SKORKIN, I.S.

Useful book "Reference book for a diesel locomotive engineering by
V.M.Terekhov, I.I.Murshin, Reviewed by A.M.Iakubovskii and others.
Elek.i tepl.tiaga 4 no.2:47-48 F '60. (MIRA 13:6)

1. Master zagotovitel'nogo tsakha, depo Chu, Kazakhskaya doroga
(for Fedosov). 2. Master tsakha bol'shogo periodicheskogo remonta,
depo Chu, Kazakhskaya doroga (for Skorkin).

(Diesel locomotives)

(Terekhov, V.M.)

(Murshin, I.I.)

FEDOSOV, F.A., inzhener; YURIKOV, P.A., inzhener.

**Operation of tube-type arresters in a 6-kv network during phase
earth faults. Energetik 4 no.3:19 Mr. '56. (MIRA 9:6)
(Electric lines)**

FEDOSOV, F.I.

AUTHORS: Scientific Collaborators of the TsNIIGAIK: 6-58-4-14/18
Yurkina, M.I., Yeremeyev, V.F., Fedosov, F.I.,
Uspenskiy, M.S., Meshchanskiy, F.L.

TITLE: Letter to the Editor (Pis'mo v redaktsiyu)

PERIODICAL: Geodeziya i Kartografiya, 1958, Nr 4, pp. 66-66 (USSR)

ABSTRACT: It is pointed out that different tables published for the same quantities, which differ only by the distribution of the material, by the reduction of the number of figures of tabulated amounts, and by the modification of the intervals between them are being published by various persons who describe themselves as authors and claim authors' rights. It is demanded that this state of affairs be ended and that in no case these persons, who merely carry out some modifications of existing tables, be allowed to claim authorship. The calculation of tables must be entrusted to the care of organizations, so that the costs of editions would be reduced.

AVAILABLE: Library of Congress

Card 1/1 1. Tables— Material distribution

AUTHORS: Sokolov, M. N., Candidate of Technical Sciences, 8.V/6-58-7-8/12
Fedosov, F. P.

TITLE: Tachymetric Tables (Takheometricheskiye tablitsy)

PERIODICAL: Geodeziya i kartografiya, 1958, Nr 7, pp. 41-50 (USSR)

ABSTRACT: By recommendation of the Central Bureau of Surveying and Cartography an investigation was carried out in the Central Scientific Research Institute of Surveying, Aerial Photography, and Cartography of the different tachymetric tables in order to select the most economic and best utilizable ones amongst them. All tables which have been published during the last 25 years were examined. The investigation yielded the following results: 1) The most useful computations were obtained with the tables 1, 2 and 3. 2) The qualification of the calculator and his ability to adapt himself to the use of the table have a more pronounced influence than the type of table used. 3) The most universal table is table 1. It is, however, too copious. 4) Table 2 is on a smaller range, it is, however, more convenient for drawing terrain

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Tachymetric Tables

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in a mosaic. 5) Table 3 is portable and it offers a sufficient performance in computations. 6) For surveying at a large scale and in mountainous regions special tables must be published. 7) The tables must be supplemented by auxiliary tables. 8) Table 1 is to be considered the standard table. There are 4 tables.

1. Mapping 2. Geophysical surveying—Tables

Card 2/2

PERKOV, I. M. --"Investigation of Certain Parameters of the Two-Zone Process of the Gasification of Peat of Higher Ash Content in a Low-Power Gas-Engine Installation."
*(Dissertations for Degrees in Science and Engineering, Defended at USSR Higher Educational Institutions) United Sci Soviet of the All-Union Sci Res Inst of Mechanization of Agriculture (VIM) and of the All-Union Sci Res Inst of Electrification of Agriculture (VIESKh), Moscow, 1955

SO: Knizhnaya Letopis', No. 25, 18 Jun 55

* For Degree of Doctor of Technical Sciences